



39754-0531A saved August 31 2004.txt

SEQUENCE LISTING

<110> Saxon, Andrew  
Zhang, Ke

<120> IMMUNOGLOBULIN CLASS SWITCH  
RECOMBINATION

<130> 39754-0531 A

<140> 09/770,169

<141> 2001-01-26

<160> 114

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial Sequence = synthetic peptide

<400> 1

ttgtccaggc cggcagcatc accggag

27

<210> 2

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial Sequence = synthetic peptide

<400> 2

actcctcagt gggatggcct ctacactccc t

31

<210> 3

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial Sequence = synthetic peptide

<400> 3

ctagaagctt tattgcggtg gt

22

<210> 4

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial Sequence = synthetic peptide

<400> 4

cgacaagctt agtttctatt ggctc

24

<210> 5

<211> 28  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Artificial Sequence = synthetic peptide  
  
 <400> 5  
 actcagatgg ctaaactgag cctaagct 28  
  
 <210> 6  
 <211> 26  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Artificial Sequence = synthetic peptide  
  
 <400> 6  
 atgtttcagg ttcaggggga ggtgtg 26  
  
 <210> 7  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Artificial Sequence = synthetic peptide  
  
 <400> 7  
 gagcctagac taacaggctg aact 24  
  
 <210> 8  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Artificial Sequence = synthetic peptide  
  
 <400> 8  
 actcctcagt gggatggact cacactccct 30  
  
 <210> 9  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Artificial Sequence = synthetic peptide  
  
 <400> 9  
 aagctttatt gcggtagttt atcacagt 28  
  
 <210> 10  
 <211> 27  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Artificial Sequence = synthetic peptide  
  
 <400> 10

ccaagatctc caggcaggca gaagtat 27

<210> 11  
 <211> 29  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Artificial Sequence = synthetic peptide

<400> 11  
 cccaactagt cttagcctga tacaacctg 29

<210> 12  
 <211> 27  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Artificial Sequence = synthetic peptide

<400> 12  
 ttgtccaggc catcagcatc actggag 27

<210> 13  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Artificial Sequence = synthetic peptide

<400> 13  
 agctgtccag gaacccgaca gggag 25

<210> 14  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Artificial Sequence = synthetic peptide

<400> 14  
 gttgatagtc cctggggtgt a 21

<210> 15  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Artificial Sequence = synthetic peptide

<400> 15  
 tgtcccttag aggacagtg gccaa 25

<210> 16  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Artificial Sequence = synthetic peptide

<400> 16  
tctagacaag gggacctgct catt 24

<210> 17  
<211> 29  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Artificial Sequence = synthetic peptide

<400> 17  
ttatcccagc agaactcagt ttaaatacac 29

<210> 18  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Artificial Sequence = synthetic peptide

<400> 18  
gcccagttca gttaacctca ac 22

<210> 19  
<211> 40  
<212> DNA  
<213> Homo sapiens

<400> 19  
tgggctgagc tgggctgggc tgggctgggc tgagcgggctc 40

<210> 20  
<211> 40  
<212> DNA  
<213> Homo sapiens

<400> 20  
tgggctgagc tgggctggtg gaaggcagga cgagcagggg 40

<210> 21  
<211> 39  
<212> DNA  
<213> Homo sapiens

<400> 21  
cagccacagg tgagcaggcc gtgagcagac gagcagggga 39

<210> 22  
<211> 40  
<212> DNA  
<213> Homo sapiens

<400> 22  
ctaacaggct gaactgggct gagctgagct gaactgggct 40

<210> 23  
<211> 40  
<212> DNA  
<213> Homo sapiens

```

<400> 23
ctaacaggct gaactgggct ggcaggagct gggtagttgc 40

<210> 24
<211> 40
<212> DNA
<213> Homo sapiens

<400> 24
tcactcagct cctagatttt ggcaggagct gggtagttgc 40

<210> 25
<211> 40
<212> DNA
<213> Homo sapiens

<400> 25
ttgaactggg ttgagctgag ctgagctgag ctgggctaag 40

<210> 26
<211> 40
<212> DNA
<213> Homo sapiens

<400> 26
ttgaactggg ttgagctgag cagagcagag gccactgagg 40

<210> 27
<211> 40
<212> DNA
<213> Homo sapiens

<400> 27
cgttcacgga gctgacccag cagagcagag gccactgagg 40

<210> 28
<211> 39
<212> DNA
<213> Homo sapiens

<400> 28
tgggctgggc tgagcgggtct agcgggctga gctgagctg 39

<210> 29
<211> 40
<212> DNA
<213> Homo sapiens

<400> 29
tgggctgggc tgagcgggtc agcctcctgg tgccgggaag 40

<210> 30
<211> 40
<212> DNA
<213> Homo sapiens

<400> 30
ggctggtgaa agtgcagtc agcctcctgg tgccaggaag 40

<210> 31
<211> 40
<212> DNA

```

<213> Homo sapiens

<400> 31  
aggagctga cccagcagag cagaggccac tgaggagctg 40

<210> 32  
<211> 40  
<212> DNA  
<213> Homo sapiens

<400> 32  
aggagctga cccagcagag ctgagcgggg ccgagcgggg 40

<210> 33  
<211> 39  
<212> DNA  
<213> Homo sapiens

<400> 33  
ctaggctggg ctgggctggg ctgagcgggg ctgagcggg 39

<210> 34  
<211> 40  
<212> DNA  
<213> Homo sapiens

<400> 34  
caggggaggc acaggggcta ggctcagagc cacctgatgg 40

<210> 35  
<211> 40  
<212> DNA  
<213> Homo sapiens

<400> 35  
caggggaggc acaggggcta ggacctggac tgggctgagc 40

<210> 36  
<211> 40  
<212> DNA  
<213> Homo sapiens

<400> 36  
tggtttgggc tgagttgagc tgacctggac tgggctgagc 40

<210> 37  
<211> 40  
<212> DNA  
<213> Homo sapiens

<400> 37  
caggaggggtg gaagccaagg agcccagagg cagaggcagg 40

<210> 38  
<211> 40  
<212> DNA  
<213> Homo sapiens

<400> 38  
caggaggggtg gaagccaagg tgaactaggg tgagctgggc 40

<210> 39  
<211> 40

```

<212> DNA
<213> Homo sapiens

<400> 39
tgggctgggc tgagctaagc tgaactaggg tgagctgggc 40

<210> 40
<211> 40
<212> DNA
<213> Homo sapiens

<400> 40
tccagggagg cccagaaagg cccagagtgc agcaggcctg 40

<210> 41
<211> 40
<212> DNA
<213> Homo sapiens

<400> 41
tccagggagg cccagaaagg aacctgggct gggctgagct 40

<210> 42
<211> 40
<212> DNA
<213> Homo sapiens

<400> 42
agccgaggct gggctgggct aacctgggct gggctgagct 40

<210> 43
<211> 40
<212> DNA
<213> Homo sapiens

<400> 43
gctgggctgg gctgagctgg gctgagctgg gctgagcaag 40

<210> 44
<211> 40
<212> DNA
<213> Homo sapiens

<400> 44
gctgggctga gctgagctgg ggccccacca aattccagct 40

<210> 45
<211> 40
<212> DNA
<213> Homo sapiens

<400> 45
tcatgaagaa aggggccgga agccccacca aattccagct 40

<210> 46
<211> 40
<212> DNA
<213> Homo sapiens

<400> 46
tgagctgagc tgggctgggc tgagctgggc tgggctgggc 40

<210> 47

```

```

<211> 40
<212> DNA
<213> Homo sapiens

<400> 47
tgagctgagc tgggctgggc ttcgtcccc gcctcctgga 40

<210> 48
<211> 40
<212> DNA
<213> Homo sapiens

<400> 48
tcgttcccag gcacctagtc atcgtcccc gcctcctgga 40

<210> 49
<211> 50
<212> DNA
<213> Homo sapiens

<400> 49
tgggctgagc gggctctgagc ggggctgagc tgagctgagg ctgggctggg 50

<210> 50
<211> 50
<212> DNA
<213> Homo sapiens

<400> 50
tgggctgagc gggctctgagc cgggcagctg gactgcgctg ggcttggatt 50

<210> 51
<211> 50
<212> DNA
<213> Homo sapiens

<400> 51
acctgagatg gacaggggta taagaagctg gactgcgctg ggcttggatt 50

<210> 52
<211> 50
<212> DNA
<213> Homo sapiens

<400> 52
ctgggctaag ttgcaccagg tgagctgagc tgagctgggc ttggctgcac 50

<210> 53
<211> 50
<212> DNA
<213> Homo sapiens

<400> 53
ctgggctaag ttgcaccagg tgagctggga tgagctgggc tgggctgaac 50

<210> 54
<211> 50
<212> DNA
<213> Homo sapiens

<400> 54
tgggctgggg tgatctgaat ttagctggga tgagctgggc tgggctgaac 50

```



```

<210> 55
<211> 50
<212> DNA
<213> Homo sapiens

<400> 55
tgggcttggc tgcactaagc tgggctgagc tgggcagggc tgggctgagc      50

<210> 56
<211> 50
<212> DNA
<213> Homo sapiens

<400> 56
tgggcttggc tgcactaagc tgggctgagc tcaactgagt tcacatgggc      50

<210> 57
<211> 50
<212> DNA
<213> Homo sapiens

<400> 57
ttaactgaac tgggctgacc tgggctgagc tcaactgagt tcacatgggc      50

<210> 58
<211> 50
<212> DNA
<213> Homo sapiens

<400> 58
gggtctgagc ggggcagctg gactgagctg ggctgagctg agctgggctg      50

<210> 59
<211> 50
<212> DNA
<213> Homo sapiens

<400> 59
gggtctgagc ggggcagctg gactgacctg ggctgagctg gacagacctg      50

<210> 60
<211> 50
<212> DNA
<213> Homo sapiens

<400> 60
gccgggacctg agctgtgatt ggaagacctg ggctgagctg gacagacctg      50

<210> 61
<211> 50
<212> DNA
<213> Homo sapiens

<400> 61
gcagctggac tgagctgggc tgagctgagc tgggctgagc tgggctgagc      50

<210> 62
<211> 50
<212> DNA
<213> Homo sapiens

<400> 62
gcagctggac tgagctgggc tgagctgggc tgggtcaggt tgaggttaac      50

```

```

<210> 63
<211> 50
<212> DNA
<213> Homo sapiens

<400> 63
tcagctgaga tatgctaata tgggctgggc tgggtcaggt tgaggttaac      50

<210> 64
<211> 50
<212> DNA
<213> Homo sapiens

<400> 64
gggctgagct gagctgggct gggctgagct gggctgggct gggctgggct      50

<210> 65
<211> 50
<212> DNA
<213> Homo sapiens

<400> 65
gggctgagct gagctgggct gggctgggca actggactga ggtggatgga      50

<210> 66
<211> 50
<212> DNA
<213> Homo sapiens

<400> 66
tcctaaactg ggtttggctg ggctgggcca actggactga ggtggatgga      50

<210> 67
<211> 50
<212> DNA
<213> Homo sapiens

<400> 67
agctgggctg agcaagctag gctgactggg ctgagctgag ctgggctgag      50

<210> 68
<211> 50
<212> DNA
<213> Homo sapiens

<400> 68
agctgggctg agcaagctag gctgagctgg gctgagctag gttagactgg      50

<210> 69
<211> 50
<212> DNA
<213> Homo sapiens

<400> 69
gggttggctc ctcgggttca gctgggctgg gctgagctag gttagactgg      50

<210> 70
<211> 50
<212> DNA
<213> Homo sapiens

<400> 70

```

39754-0531A saved August 31 2004.txt

ggactgagct gggctgagct gagctgggct gagctgggct gagcaaggct 50

<210> 71  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens

<400> 71  
 ggactgagct gggctgagct gggctgcctg gcctgggcct aaactggggt 50

<210> 72  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens

<400> 72  
 aactgagttc acatgggctg ggctggcctg gcctgggcct aaactggggt 50

<210> 73  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens

<400> 73  
 gcagggctgg gctgagctga gctgggctgg gctgagctgg gctgggctgg 50

<210> 74  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens

<400> 74  
 gcagggctgg gctgagctga gctgggctga gctaaatggg attgagctga 50

<210> 75  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens

<400> 75  
 ttagctgggt gggctgagta actgggctga gctaaatggg attgagctga 50

<210> 76  
 <211> 46  
 <212> DNA  
 <213> Homo sapiens

<400> 76  
 cggggctgag cgggctgagc tgagctaggc tgggctgagc ggggct 46

<210> 77  
 <211> 49  
 <212> DNA  
 <213> Homo sapiens

<400> 77  
 ctggggctga gctggggctg agctgcctgg ccaggcctga gctgtgatt 49

<210> 78  
 <211> 49  
 <212> DNA  
 <213> Homo sapiens

<400> 78  
 ggtggatgga gctgggctga gctggcctgg ccgggcctga gctgtgatt 49  
 <210> 79  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens

<400> 79  
 actaacaggc tgaactgggc tgagctgagc tgaactgggc tgagttgaac 50  
 <210> 80  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens

<400> 80  
 actaacaggc tgaactgggc tgagctgggt caggttgagg ttaactgaac 50  
 <210> 81  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens

<400> 81  
 tgagatatgc taatatgggc tgggctgggt caggttgagg ttaactgaac 50  
 <210> 82  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens

<400> 82  
 ccaggtgagc tgagctgagc tgggcttggc tgcactaagc tgggctgagc 50  
 <210> 83  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens

<400> 83  
 ccaggtgagc tgagctgggc tgggctgagc tgggcttggc ttattgaacc 50  
 <210> 84  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens

<400> 84  
 tggacagggt tataagaagc tggactgagc tgggcttggc ttattgaacc 50  
 <210> 85  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens

<400> 85  
 ttggctgcac taagctgggc tgagctgggc agggctgggc tgagctgagc 50  
 <210> 86  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens

<400> 86  
ttggctgcac taagctgggc tgagctgggc ttggattatt gaaccgaatt 50  
<210> 87  
<211> 50  
<212> DNA  
<213> Homo sapiens

<400> 87  
agggttataa gaagctggac tgagctgggc ttggattatt gaaccgaatt 50  
<210> 88  
<211> 50  
<212> DNA  
<213> Homo sapiens

<400> 88  
gcaccaggtg agctgagctg agctgggctt ggctgcacta agctgggctg 50  
<210> 89  
<211> 50  
<212> DNA  
<213> Homo sapiens

<400> 89  
gcaccaggtg agctgagctg agctgggctt ggattattga accgaattgg 50  
<210> 90  
<211> 50  
<212> DNA  
<213> Homo sapiens

<400> 90  
ggttataaga agctggactg agctgggctt ggattattga accgaattgg 50  
<210> 91  
<211> 50  
<212> DNA  
<213> Homo sapiens

<400> 91  
tgcaccaggt gagctgagct gagctgggct tggctgcact aagctgggct 50  
<210> 92  
<211> 50  
<212> DNA  
<213> Homo sapiens

<400> 92  
tgcaccaggt gagctgagct tggaagcgtc gcctggccag gcctagagct 50  
<210> 93  
<211> 49  
<212> DNA  
<213> Homo sapiens

<400> 93  
gactgaggtg gatggagctg ggctgagctg gcctggccgg gcctgagct 49  
<210> 94  
<211> 50  
<212> DNA

<213> Homo sapiens  
 <400> 94  
 gctgagttga actgggttga gctgagctga gctgagctgg gctaagttgc 50  
 <210> 95  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens  
 <400> 95  
 gctgagttgg actgggttga gctgaacaga cctgagccaa gcttagctag 50  
 <210> 96  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens  
 <400> 96  
 gattggaaga cctgggctga gctggacaga cctgagccaa gcttagctag 50  
 <210> 97  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens  
 <400> 97  
 gcaccaggtg agctgagctg agctgggctt ggctgcacta agctgggctg 50  
 <210> 98  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens  
 <400> 98  
 gcaccaggtg agctgagctg agctgggctt ggattattga accgaattgg 50  
 <210> 99  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens  
 <400> 99  
 ggttataaga agctggactg agctgggctt ggattattga accgaattgg 50  
 <210> 100  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens  
 <400> 100  
 acaggctgaa ctgggctgag ctgagctgaa ctgggctgag ttgaactggg 50  
 <210> 101  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens  
 <400> 101  
 acaggctgaa ctgggctgag ctgagcttgg attattgaac cgaattgggt 50  
 <210> 102  
 <211> 50

<212> DNA  
 <213> Homo sapiens  
  
 <400> 102  
 ttataagaag ctggactgag ctgggcttgg attattgaac cgaattgggt 50  
  
 <210> 103  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens  
  
 <400> 103  
 actaacaggc tgaactgggc tgagctgagc tgaactgggc tgagttgaac 50  
  
 <210> 104  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens  
  
 <400> 104  
 actaacaggc tgaactgggc tgggcaactg gactgaggtg gatggagctg 50  
  
 <210> 105  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens  
  
 <400> 105  
 aaactgggtt tggctgggct gggccaactg gactgaggtg gatggagctg 50  
  
 <210> 106  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens  
  
 <400> 106  
 ctgagttgaa ctgggttgag ctgagctgag ctgagctggg ctaagttgca 50  
  
 <210> 107  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens  
  
 <400> 107  
 ctgagttgaa ctgggttgag ctgaggagga ctaggctggg tgagtgacct 50  
  
 <210> 108  
 <211> 50  
 <212> DNA  
 <213> Homo sapiens  
  
 <400> 108  
 tttgggctaa actgggtgag ctggggagga ctaggctggg tgagtgacct 50  
  
 <210> 109  
 <211> 5  
 <212> DNA  
 <213> murine and homo sapiens  
  
 <400> 109  
 gagct 5  
  
 <210> 110

<211> 5  
 <212> DNA  
 <213> murine and homo sapiens

<400> 110  
 ggggt

5

<210> 111  
 <211> 7  
 <212> DNA  
 <213> murine and homo sapiens

<220>  
 <221> misc\_feature  
 <222> 1  
 <223> n= c or t

<400> 111  
 naggttg

7

<210> 112  
 <211> 5  
 <212> DNA  
 <213> murine and homo sapiens

<400> 112  
 gcagc

5

<210> 113  
 <211> 5  
 <212> DNA  
 <213> murine and homo sapiens

<400> 113  
 tgagc

5

<210> 114  
 <211> 5  
 <212> DNA  
 <213> murine and homo sapiens

<400> 114  
 gggct

5